JAN 10 33 M

THE AIR CORPS News Letter

ISSUED BY THE
OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

Vol. XVI December 30, 1932 No. 15

pg missing plates

TABLE OF CONTENTS

---oOo---

	Page
The Air Corps for 1932	483 - 486
Gunnery and High Altitude Flights by 19th Pursuit Squadron	486
26th Attack Squadron Wins Wichman Trophy	486
The New Bolling Field	486
Problem of Airplane Noise Reduction Studied at Materiel Division	487 - 488
Pursuiters Find It Difficult to Carry Out Night Missions	488
Aerial Delivery Unit Developed	488
Enlisted Passenger Rescues His Pilot in Nick of Time	489
Air Corps Flies Gastronomic Rescue Mission	489
Day and Night Bombing in the Caribbean Sea	489 - 490
Dropping a House from a Bomber	490
Barksdale Field, La. Comes into Action	490
New Two-Seater Pursuit Plane to Be Tested	491
Reserve Officers Meet to Discuss Their Problems	491
Major Gilkeson Has Forced Landing at Selfridge	491
Massachusetts National Guard Airmen in New Quarters	492
Bombardment Board in Session	492
Heavy Snowfall Permits Ski Flying at Selfridge Field	492
Air Corps Loses Four Officers	493
Preparing for Another Invasion of the Antarctic Regions	494
No Dearth of Candidates among Massachusetts National Guard Airmen for Seat of Honor	494
South Sea Insect Invades Randolph Field	494
Increased Personnel for Allbrook Field	495
There Are Chickens and Chickens	495
Collision with High Tension Power Line Proves Fatal	495
Kitchen Mechanic Decides to Become Aviation Mechanic	495
Notes from Air Corps Fields	496 - 505
List of New Material Added to Information Division Files	506
Inspection Division Notes	507

VOL. XVI AIR CORPS NEWS NO. 15

Information Division, Air Corps — December 30, 1932. — Munitions Building, Washington

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

Publishers are authorized to reprint material appearing herein, except that portion of the News Letter beginning with Notes from Air Corps Fields.

---oOo---

THE AIR CORPS FOR 1932

On June 30, 1932, the fifth year's operation of the Air Corps Five Year Development program came to a close, with certain noticeable shortages in the consummation of the original provisions of the program. On that date there was a shortage of 396 officers (pilots) with little hope that the shortage will be materially alleviated during 1933. The entire Army is practically up to its authorized officer-strength and there are no vacancies which the War Department could allot to the Air Corps for the latter to fill by commissioning as permanent officers those men who completed the prescribed flying course at Randolph and Kelly Fields as Flying Cadets and who were, and still are, second lieutenants in the Air Corps Reserve. Experienced officers of other branches are not transferring into the Air Corps and its only incoming personnel are the West Point graduates who desire an Air Corps career and are also able to complete the prescribed one year's course of flying which is a prerequisite to being commissioned in the Air Corps. Fine as these young officers are, they are hardly more than sufficient, in number, to compensate for losses among the other Air Corps officers due to death, retirement and resignation. On the experience of the last several years there appears no chance for the Air Corps to reach its authorized strength of flying officers for many years to come.

A shortage of enlisted men also exists, although not such an acute one. As this is written complete reports from Hawaii and the Philippines have not yet been consolidated. The last complete report, as of October 31, 1932, reads as follows for actual strength:

Regular Air Corps Officers - 1293 plus 77 officers detailed to Air Corps to undergo flying training.
Reserve officers on extended active duty - 303.
Warrant Officers - 27
Enlisted Men - 12,803 plus 301 Flying Cadets.

Changes were experienced early in the year in the directing heads of the Air Corps, Major-General James E. Fechet, retired as Chief of the Air Corps and was succeeded by Brigadier-General Benjamin D. Foulois, who had been Assistant Chief of the Air Corps and who was promoted to Major General, the rank commensurate with his new position. Lieutenant-Colonel Oscar Westover who had been Chief of The Air Corps sub-section at the Command and General Staff School at Fort Leavenworth, Kansas, was appointed to fill the vacancy caused by General Foulois' promotion and is now Brigadier-General Westover, on duty in the Office, Chief of the Air Corps. The two existing Assistant Chiefs of Air Corps at the time, Brigadier-General Henry C. Pratt as Chief of the Materiel Division at Wright Field, Ohio, and Brigadier-General Charles H. Danforth in command of the Air Corps Training Center at Randolph Field, remained in charge of their activities.

Our Air Corps consists of the following larger units:-

Continental United States -

West Coast

March Field, Riverside, Calif. - 1st Bombardment Wing, consisting of 7th Bombardment Group, of 9th, 11th and 31st Bombardment Squadrons and 70th Service Squadron and 17th Pursuit Group of 34th, 73d and 95th Pursuit Squadrons and 64th Service Squadron.

Rockwell Field, San Diego, Calif. - 19th Bombardment Group, consisting of 30th 32d Bombardment squadrons. 91st Observation Squadron at Crissy Field, San Francisco, Calif.

South

Primary and Advanced Flying Schools at Randolph and Kelly Fields, respectively, near San Antonio, Texas.

Barksdale Field, Shreveport, La. - 20th Pursuit Group of 55th and 77th Pursuit and 71st Service Squadrons. This group vacated Mather Field, Calif., on October 15th and removed to new station at Barksdale Field which is to be the home of the 3d Attack Wing, consisting of 20th Pursuit Group and 3d Attack Group, now at Fort Crockett, Galveston, Texas, of 8th, 13th and 90th Attack, and 60th Service Squadrons and Headquarters, 3d Attack Wing.

Air Corps Tactical School at Maxwell Field, Montgomery, Ala. 12th Observation Group of 12th, 22nd and 88th Observation and 62nd Service Squadron at Brooks Field, Texas.

Central and North

Selfridge Field, Mt. Clemens, Mich. - 1st Pursuit Group of 17th, 27th and 94th Pursuit and 57th Service Squadrons.

Air Corps Technical School at Chanute Field, Rantoul, Ill.

21st Airship Group at Scott Field, Ill.

Air Corps Engineering School at Wright Field, Dayton, Ohio, which is also the home of the Air Corps Materiel Division.

15th Observation Squadron at Scott Field, Ill.

16th Observation Squadron divided into flights with a flight each at various fields also in South and East.

East

Langley Field, Va. - 2nd Bombardment Wing, consisting of 2nd Bombardment Group of 20th, 49th and 96th Bombardment and 59th Service Squadrons, and 8th Pursuit Group of 33rd, 35th and 36th Pursuit and 58th Service Squadrons.

9th Observation Group of 1st, 5th, 99th Observation, and 61st Service Squadron at Mitchel Field, L.I., N.Y.

Also 19 National Guard Observation Squadrons in the following States: Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Ohio, Indiana, Illinois, Tennessee, Alabama, Minnesota, Colorado, Washington, California, Texas, Arkansas, Missouri and Michigan.

Possessions:

Panama - 1 Composite Wing, consisting of 2 observation, 2 pursuit, 1 bombardment and 2 service squadrons, organized into a composite group and a pursuit group.

Hawaii - 1 composite wing, consisting of the 5th Composite Group of 2 observation and 1 service squadron, and the 18th Pursuit Group, of 2 pursuit, 1 attack and 1 service squadron.

Philippines - 1 Composite Group, of 1 observation, 1 bombardment, 1 pursuit and 1 service squadron.

Five additional pursuit squadrons are yet to be organized if the provisions of the 5-year development program are carried out.

On June 30, 1932, the close of the fiscal year, there were on hand for the Regular Army, National Guard and Organized Reserves a total of 1729 airplanes, exclusive of experimental and service test airplanes, obsolete types and those awaiting survey as no longer capable of being repaired. Approximately 210 of all types were temporarily unserviceable on that date, either undergoing major repairs or overhaul at the depots. Considering only those airplanes which are serviceable, that is, those available for full use in tactical units or for training, the actual airplane strength was only 1509 with 70 additional which had been contracted for but not yet been delivered. In other words there was a shortage of 221 of the 1800 serviceable airplanes which were the goal of the five-year program. The National Guard was up to its authorized airplane strength, therefore, this shortage existed in the airplane strength of the Regular Army and Reserves.

Few contracts have been consummated for the current fiscal year as yet, but several new models, described below, which have been lately received and which have been given experimental and service tests to determine their suitability have given such promise that purchase of larger lots from existing appropriations will give the Air Corps a quality of equipment that was unhoped for a year ago. Many of these airplanes will be in use in the late Spring and the beginning of the next fiscal year should see most of them used by the various tactical squadrons, with some squadrons completely equipped with new models.

Pursuit aviation is progressing in the development of its tactics to keep pace with recent advance in bombardment speeds. In June the 8th Pursuit Group was organized at Langley Field, Va., making an active organization of the 2nd Bombardment Wing which consists of the 8th Group and the 2nd Bombardment Group. On October 15th the 20th Pursuit Group removed from Mather Field, Sacramento, Calif., and moved to Barksdale Field, Shreveport, La. This group will get one of the five pursuit squadrons which it is hoped to organize in the future. Mather Field reverted to an inactive status.

Standard models of pursuit planes now are Boeing P-12E, (most pursuit units are equipped with P-12's, P-12B's, C's, D's or E's) a single seater biplane with P.W. 525 air-cooled radial engine; Curtiss P-6E, (the equipment of 1 squadron of the 1st Pursuit Group and one in the 8th Group) a Curtiss Hawk single seater biplane with Curtiss Conqueror 600 H.P. Prestone-cooled V type engine. The above are single seaters. The 94th Squadron at Selfridge Field, Michigan, are service-testing the Berliner-Joyce P-16, a two-seater gull-wing biplane with prestone-cooled "Conqueror" engine to determine the tactical value of this two-seater. A six-ship formation of these airplanes made a forced flight from Selfridge Field to Rockwell Field, San Diego, Calif., on September 16th and returned several days later after a lay-over at Rockwell Field. Several stops were made for fuel and inspection and after each take-off the five junior pilots in the flight alternated in taking the lead; a valuable practice in flight leadership over strange terrain. The distance out, through refueling stops, of 2150 miles was made in 15 hours flying time.

Another two-seater pursuit model, the Consolidated P-25, an all-metal low-wing monoplane with retractable landing gear and powered with a prestone-cooled Conqueror, with a tunnel type radiator, was received on December 11th at the Materiel Division to undergo the routine experimental tests.

The low-wing monoplane trend is evicenced in the Boeing P-26 (formerly known as the XP-936), a small number of which are now undergoing service tests in the squadrons and the Curtiss XP-934, which was received November 10th at the Materiel Division for its experimental tests. The P-26 is powered with a P.W."Wasp", much the same as in the P-12E, and the XP-934, equipped with slots and flaps for low landing speeds, has a prestone-cooled "Conqueror" in its nose.

During the past year, training in observation squadrons reached a higher standard than ever before, so far as the training of the observation crew of pilot and observer was concerned; due to a well rounded system of training. A shortage of flying hours, however, prevented many missions which required the services of a squadron or a group, and thus handicapped efforts at unit training.

Standard models of observation aircraft are:

Thomas-Morse O-19E, light biplane with P.W. "Wasp" engine.
Douglas O-25C, Douglas series with prestone-cooled "Conqueror" engine.
Douglas O-38B, with P.W. "Hornet" of 525 H.P.
Curtiss O-39, Falcon which with wheel pants and prestone-cooled "Conqueror" has a high speed of 173 M.P.H.

Observation aviation has a comparatively large number of satisfactory models, and the air service, or "eyes of the Army" is in better shape than the air force (bombardment, pursuit and observation) units. In addition to the above models, two new ones have made their appearance.

They are the Douglas 031, a gull-wing monoplane with prestone-cooled "Conqueror" and capable of being equipped with the new double-row radial engine; and the Curtiss O-40, which is being tried out in two styles. One is a sesquiplane, the other as a monoplane with slots and flaps. The O-40 is equipped with the SR-1830 Wright "Cyclone" engine and has retractable landing gear. Late models of the O-31 have cantilever landing gears and larger rear cockpits than first O-31 models of late 1931.

These new models have boosted the high speed of observation aircraft to close to the 200 M.P.H. mark.

Our long range reconnaissance airplanes are the General Aviation O-27 with two "Conqueror" engines and the gull-winged Douglas O-35, which is similarly powered.

In attack aviation, the Curtiss A-8 is now being service tested. This is low-wing monoplane, with slots and flaps, powered with a 600 H.P. "Conqueror" and carrying pilot, gunner, 6 machine guns and 20 small bombs. It is expected that other manufacturers will submit

attack models for test in the near future.

In bombardment aviation, training in group and squadron formations has continued to develop greater flexibility. The 2nd Bombardment Group at Langley Field, Virginia, are experimenting with types of formations which allow the best defense against air attack by hostile pursuit and at the same time have offensive value and leave no opening for air attack while the bombers are deploying for their bomb-dropping runs.

The performance of Army aircraft has kept abreast of those used by other leading powers. Numerically, however, in personnel and numbers of tactical airplanes, the air force component of our Air Corps put us in fourth place in the air forces of the world as of June 30,1932. No comparative figures are available as of the end of the calendar year 1932, for which this article is written.

Service tests, where certain new models are operated in the daily routine of the tactical squadrons, as well as prior experimental tests, have shown us that high speed airplanes have proven the necessity for improved streamlining of the fuselage and the 1932 tendency is toward this objective for all types of military aircraft. New data on the relative merits of streamlined wheels and retractable landing gear are on hand and have been incorporated into the Air Corps instructions to the contractors furnishing it with equipment; together with standards and criteria resulting from more careful analyses of airplane structures which have been required by increasing speeds and their resultant high stresses.

Alloy propellers and two types of those with controllable pitch, are being service-tested in small quantities. Magnesium alloys are being tested with the object of utilizing the large savings in weight made possible by this metal. Welded aluminum alloys are also being tested. The subject of the reduction of propeller noises is treated in the current issue of the Air Corps News Letter.

Structural research is being directed toward wing design, with stress analysis and design having been completed this past year for an all-spot welded, corrosion resistant steel wing of the stress-covering, single-web, cantilever type. Wing radiators were included in the type of wing studied.

The TC-13 dirigible, now under construction for the Air Corps will use two geared air-cooled engines. The five-fin control surface arrangement is expected to improve ground clearances, low speed control and surface stability at high speeds. It is equipped with an observation car that may be lowered 1500 feet below the airship for special forms of observation. The TC-13 is also expected to have an endurance, at the cruising speed of 52.6 M.P.H. of 35 hours, or a hovering speed of 25 M.P.H. for 100 hours.

Power plant developments tended toward the improvement in performance of service engines and accessories. Tests included carburetion, cooling systems, fuels, lubricants, spark plugs, radio shielded ignition, magneto and battery ignition, pressure indicators, silencers and superchargers.

A new laboratory was completed wherein conditions of cold winter and rarified air, high altitude flying may be simulated, thus enabling Air Corps engineers to test engines in the laboratory at 55° below zero Fahrenheit and with rarified air such as exists at 30,000 feet above sea level.

Lubricanting oil tests, completed in 1932, resulted in a drastic change in specifications, the new oils showing marked improvements in conditions of the engines after extended periods of research. The Air Corps is entering upon a fairly large scale test program of oils produced by the aluminum chloride synthesis.

In the field of aerial navigation, definite progress has been made, through extensive research and experiments in application of the radio to fog flying and blind landings. The result was a demonstration at Patterson Field, Ohio, in May, 1932 by Capt. Albert F. Hegenberger of a complete blind solo flight, including blind take-off, 10 minutes or more of maneuvering and blind landing, without carrying a look-out or check pilot in the rear seat. Blind flying is part of the routine training of all Air Corps fields.

Earlier in the year, in January, Captain A.W. Stevens, flying at 23,000 feet altitude obtained a picture of Mt. Shasta, California, from a distance of 331.2 miles. This is the longest range photograph ever obtained and covers the greatest amount of the earth's surface (7200 square miles) ever encompassed by a single photographic exposure. Captain Stevens also obtained the high altitude photograph, to date, from 39,150 feet, taking in territory near Rushville, Indiana.

Achievements in gunnery and bombing have also been noteworthy. At the aerial machine gun and bombing matches of 1932 at Langley Field, Virginia, in September, the high score in each of the four events exceeded the high score of previous years, with winning scores as follows:
Pursuit Pilots' Match - Lieut. W.C. Morse scored 1014 with a 1750 possible.
Observation and Attack Pilots' Match - Lieut. C.G.Goodrich scored 962 with a 1750 possible.
Observers' Match - Lieut. P.D. Jacques scored 1024 with a 1940 possible.
Bombers' Match - (Lieut. Wm. B. Offutt, Pilot) Scored 1932 with a 2000 possible.
(Lieut. J.J. Ladd, Bomber)

The high bombing score represents the expert's accomplishment, but the bombing average of the Air Corps is not far below this high score. All 43 officers of the 7th Bombardment Group at March Field, California, made their "expert" rating and the average score for the group was 1822, or 91% of the perfect score.

No announcement can be made as yet of the winner of the Mackay Trophy for the most meritorious flight for 1932. It will be recalled that the Trophy was awarded in 1932 for the most meritorious flight of the previous year, to Benjamin D. Foulois, then Brigadier-General and Assistant Chief of the Air Corps for his flight leadership of the 1st Provisional Air Division of 572 airplanes in its flight through the Northeast part of the country.

The Cheney Award for heroism in a humanitarian interest is yet to be made for 1932. It was presented this year for two acts of the previous year, to Lieutenant Robert D. Moor, (posthumously) for sacrificing his life to save his passenger in a disabled airplane, and to Private John B. Smith for rescuing an officer from a wrecked and burning airplane.

The opportunity for cooperative training with the Navy was taken advantage of and the Army Air Corps played a prominent part in the joint Army and Navy maneuvers at Hawaii

The aerial photographic sections of the Air Corps also cooperated with the various government departments and over 48,000 square miles of territory were photographed for non-military mapping purposes. This work was done for the new military activities of the War Department and for the Geological Survey, Coast and Geodetic Survey, Department of Agriculture, Department of Justice and others. The work included aerial mosaics, such as are

required for topographic mapping, flood control, highway planning, settlement of boundary disputes, etc.

Contrary to the general opinion that Army airplanes drop only death and destruction, the 11th Bombardment Squadron of March Field, California, last January at the request of the Indian Bureau, dropped 15 tons of foodstuffs to 2000 stormbound and starving Navajo Indians in northern Arizona.

Other achievements, worthy of mention but not yet officially recognized will probably be recorded for 1932, at some later date, but the above is a brief description of the record of the work of the Air Corps for 1932.

---oOo---

GUNNERY AND HIGH ALTITUDE FLIGHTS BY 19TH PURSUIT SQUADRON

Gunnery season has just passed, and without a doubt was the most successful in many years. The writer personally believes this Squadron has established a record throughout the Air Corps. Lieutenant Burns won the honors for the highest score with a total of 1380 points, while the squadron registered 1094.35 for an average.

Six ships including P-12-B's and P-12-C's have been equipped with the latest oxygen paraphernalia. Participation in high altitude missions has been going on for several days. The highest altitude reached was 28,000 feet, with maneuvers being conducted around 20,000 to 25,000 feet. The biggest objection to these flights is the excessive cold, but everyone seems to get a charge out of it. May be its the oxygen. The 19th is at Wheeler Field, Hawaii.

---oOo---

26TH ATTACK SQUADRON WINS WICHMAN TROPHY

On November 10th the personnel of the 26th Attack Squadron threw out their chests, and with faces beaming with pride watched the review given in their honor by the 18th Composite Wing as a reward for winning the H.F.Wichman Trophy. This trophy, a large handsome loving cup was obtained through Mr. John A. Hamilton, representing the Honolulu Chamber of Commerce, to be awarded to the Air Corps Squadron in Hawaii with the best flying record in flying hours, number of airplanes in commission, fewest forced landings, degree of completion of training schedule, and other factors. In winning this trophy the 26th Attack Squadron completed 2,751 hours of flying, an average of 250 hours per plane, without a forced landing. It not only completed its training schedule but continued 14 percent beyond the schedule required.

The trophy was presented by Lieut.-Colonel Gerald C. Brant, Wing Commander, to Lieutenant Leonard H. Rodieck, commanding the 26th Squadron. In presenting the cup Col Brant said, in part: "Through the efforts of Mr. John A. Hamilton, President of the Honolulu Chamber of Commerce, and Mr. Merle Johnson, the jewelry firm of H.F. Wichman was prevailed upon to donate an appropriate trophy to be awarded each year for the Air Corps organization maintaining the highest degree of efficiency throughout the training year. With the earnest cooperation and enthusiasm of these fine air-minded citizens, this beautiful trophy has been made possible.

In reaching a decision as to which squadron has attained the highest efficiency and therefore is entitled to this trophy, much time and computation was involved. With so little relative difference in the efficiency of these squadrons, it was hard to determine the rightful winner. Considering all conditions and phases of the work undertaken, the equipment used and the results obtained, together with a total lack of forced landings, it was decided that the 26th Attack Squadron was the squadron to be honored. Lieutenant Rodieck, it is with the utmost pleasure that I award you this cup, the H.F. Wichman Trophy, for the highest efficiency obtained by any Air Corps unit in the Hawaiian Department for the training year of 1932. You, your officers and men, are to be individually congratulated for their work in helping win this trophy. The work performed is indicative of a high state of training, morale and teamwork within your organization. I know that these conditions will continue to exist and that next year you will be a strong defender for further possession of this coveted trophy.

---oOo---

THE NEW BOLLING FIELD

The work on the new Bolling Field construction project is making excellent progress. The installation of an underground, high-tension line by the Harrison-Wright Company and the Arundel Contract, for grading a portion of the new landing field, measuring 6400 feet by 1000 feet, have both been completed. The Air Corps Barracks is nearly ready to be turned over to the Constructing Quartermaster by the M.H.Sobel Company.

The following contracts are at present under construction: 11 double N.C.O. quarters; 11 company and 2 field officers' quarters; 1 fire and guard station; 1 A.C. warehouse; 1 Q.M. warehouse; 1 Q.M. maintenance building; A combined Post Exchange, Gymnasium and theatre; A Central heating system.

The Constructing Quartermaster has advertised for the construction of a dispensary and an incinerator, and specifications for sewers, water and gas are now being written by that office. This part of the work will soon be under way.

---oOo---

Staff Sergeant Talmage Langston of Bolling Field, has been awarded the Order of the Purple Heart for wound received in action at St. Mihiel during the World War.

---oOo---

Balloon Companies of the Air Service, A.E.F., at the Front numbered 23; at the time of the signing of the Armistice. The First and Second Balloon Companies were assigned to the Front on April 15, 1918. Three companies took part in the Chateau Thierry counter-offensive; they lost 8 balloons from attacks by enemy pursuit aviation; 1 balloon was damaged by shell fire and 12 of our balloon observers were forced to "bail out" and descend via parachute during these operations around Chateau Thierry.

---oOo---

PROBLEM OF AIRPLANE NOISE REDUCTION STUDIED AT MATERIEL DIVISION

By Major F. H. Coleman, Air Corps.

THERE are probably no wholly unfavorable features in the aeronautical scheme which have not in the past decade yielded in some portion to the refinements of development, with the exception of the noises produced by the airplane in operation. That these noises have always been an undesirable characteristic, both from the point of view of the passenger traveling over a commercial airways and from the military point of view, goes undisputed. To the passenger they are wearisome and nerve-trying. From the military standpoint they are far more dangerous. They apprise the ground enemy of the approach of the military airplane from a great distance, thus rendering the principle of surprise more difficult of achievement if not totally impossible.

Attempts to solve the noise problem have been made in many countries, both for military and commercial airplanes. Marked progress, however, has not been achieved, nor is the outlook for complete solution altogether promising. A little over a year ago, the Materiel Division definitely took a hand in the work, and investigations have progressed to the point where it may be said that the sources of noise are understood and efforts to subdue them have reached practical limits, with the result that single-engined airplanes equipped with noise reducing equipment are not heard on the ground when flying at an altitude of 8,000 feet. This altitude will, of course, vary with the atmospheric conditions and the degree to which knowledge of sound reduction is applied to the airplane.

The principal sources of noise, in order of importance, are: the propeller, the exhausts, engine clatter, and whistling wires. The noise energy of any one of these is so great that even large reductions in that energy result in only what appear to be small reductions in the noise heard. This statement will become clearer if the relation between the heard noise and the energy required to produce this noise be very briefly discussed.

In discussing just plain noise such as that given off by an airplane, boiler factory, or subway train, we are not interested in quality, harmony and such characteristics, but rather in the quantity, or loudness of noise. The first thing we need, therefore, is a unit of measurement by means of which we can express the loudness of any particular noise. This unit to be readily understood should be such that we could refer to a noise of, for instance, 40 units as being twice as loud as a noise of 20 units. Such a unit has been devised and is called the "decibel," in honor of Dr. Graham Bell. These units are such that the noise of an ordinary conversation is a matter of 35 or 40 decibels, that of a Pullman smoking room about 65, that of a subway train about 85, and that of an ordinary military airplane about 110. A noise of about 135 decibels is painful and further increases produce in the ear more pain rather than a sense of more noise. Next we, of course, must be able to measure the loudness of any particular noise. This can be done only by measuring the energy represented by the noise. The fact that noise represents the display of energy is rendered clear by noting the vibration of walls, windowpanes, cans, and such diaphragms during the production of loud noises. Instruments involving microphones and vacuum tubes are now available for measuring this energy and are calibrated to read directly in "decibels." However, if we have an airplane producing a hundred decibels of noise and we place another airplane of the same kind beside the first we might naturally expect 200 decibels of noise. If, instead, our instrument shows only 103 decibels, we may wonder what is the matter. Therefore, to proceed understandingly, we must know the relation between the unit of loudness (the decibel) and the energy required to produce it because, after all, it is the noise energy that we must really reduce if we are to secure a reduction in the noise. This relation is a logarithmic one and has been found to be represented with fair accurateness by the expression that the number of decibels in a given noise is equal to ten times the logarithm of the ratio of the energy producing the noise to the energy required to produce a noise that would be barely audible. For example, the pressure required to produce a barely audible sound may be taken to be 1 dyne per square centimeter. If we have a noise, the noise pressure of which is 100 dynes per square centimeter, the heard noise is said to be 20 decibels, or 10 times the logarithm of 100 divided by one.

Similarly, the noise of an ordinary airplane as heard at a distance of 80 feet may be said to be 100 decibels. This would correspond to a noise pressure of 10,000,000,000 dynes per square centimeter. To reduce this 100 decibels down even to 90 decibels, which is still a great noise, we must reduce the noise energy down to 1,000,000,000 dynes per square centimeter, or a reduction of 90 per cent of the original noise energy. Hence it is quite clear that tremendous reductions in noise energy must be made to secure quite immaterial reductions in heard noise. In reducing this 100 decibels of noise energy by 99 per cent, we would still have a heard noise of 80 decibels, and, similarly, with a 99.9 per cent reduction, we would still have 70 decibels. This is still a considerable amount of noise, but the reduction is as great as has been achieved even in cabin planes where sound proofing of the walls may be resorted to. A further illustration is that of two engines of the same kind running side by side and giving out a total noise of 100 decibels. If one of these were shut off completely, a noise of 97 decibels would still remain.

From the above explanation it might seem that reductions in decibels are so small compared to the reductions in noise energy required that results are not worth the effort. But it must be remembered that even though these small reductions are not sufficient to decrease materially the discomfort of passengers of aircraft, they are of great value for military purposes, due to the fact that noise energy varies inversely as the square of the distance from the noise source. That is, if a sound that could be heard ten miles away were reduced by 6 decibels, it would be heard only five miles away. For this reason any reduction whatever, even of a few decibels, is valuable from a military standpoint.

The efforts of the Materiel Division to date have been restricted to the reduction of the noises produced by the propeller and exhaust as these form the predominant sources of noise energy. The noises produced by wires and engine clatter are negligible in comparison. Regarding the propeller, it has been established that the tip speed is the controlling noise factor, although the thickness, width, and pitch of blades are contributing elements. Therefore, it would appear that when a propeller with the widest, thinnest blade turning at the minimum practicable tip speed is employed, the ultimate has been achieved in propeller noise reduction.

Exhaust silencing has been the subject of constant experimentation for the past 30 years, and thousands of different ideas embodied in exhaust mufflers are to be found among commercial products of today. Effective mufflers must in general be bulky and heavy, two very undesirable qualifications when used in connection with an airplane. The conventional automobile muffler

is effective, but one of the same type to be made equally effective for a 500-h.p. aircraft engine would be in size of the nature of a 25-gallon barrel. For the airplane, a successful muffler must have practicable dimensions, similar to the ordinary exhaust pipe, with only reasonable increases in diameter and length. Various commercial concerns skilled in the art of muffler design cooperated with the Materiel Division in an effort to produce a successful muffler, and their products were tried out. The commercial design referred to and that of the Materiel Division are both cylindrical in exterior shape, the latter being of much smaller diameter and shorter length than the commercial design.

The principles that appear to determine the extent to which exhausts can be silenced are back-pressure, noise-absorption, interference, cooling, and tortuous passages. These have all been applied to aircraft mufflers but with indifferent success. Complete interference is impracticable due to complexity of emitted sound, arrangement of cylinders, and the necessarily cumbersome nature of design. Absorption is impracticable because of size, weight, and excessive heat. Cooling is impracticable due to size and weight of equipment. This leaves only the back-pressure principle, with some slight assistance from limited interference and tortuous passages remaining.

Of course, if exhausts could be completely closed, there would be no sound at all. This being impossible, it is a question how nearly they can be closed with impunity. The Division's present design gives a back pressure of five inches of mercury at cruising speed. Investigation has shown this is not excessive. However, for speeds to be used in silent flight this muffler gives only 2 inches of mercury. For use in higher speeds a cutout is provided, noise being unimportant in such cases. In this way the noise produced at the instant of the opening of the exhaust valve is suppressed. These cylinder discharges, however, also produce noise at the exit of the exhaust manifold. This noise can be interfered with by providing in the silencer a buffer chamber of suitable dimensions and by the use of tortuous passages. These features are also incorporated in the Division design.

According to conservative estimate, the efforts of the Materiel Division have resulted in a sound reduction of 20 decibels, or the elimination of 99 percent of the total sound energy of the airplane in operation. That is, if airplanes such as the P-6E, O-1, A-8 and O-13 should have applied to them all the noise reducing remedies that the Materiel Division investigation has disclosed, the airplane noise at cruising speed would be 20 decibels less after application of the remedies than before. This reduction, it must be remembered, is secured by reducing noise energy at its source and has nothing to do with noise reduction obtained by the insulation of airplane cabin walls with sound absorption materials.

While it would seem at present that the only completely silent airplanes ever to be achieved will be those on the ground with engines shut off, and that the results outlined above have reached approximate limits of practicability, nevertheless efforts are still in progress, especially those pertaining to the reduction of the tip speeds of propellers by means of controllable pitch blades. That this is a fruitful field of endeavor may ve visualized from the example in which a BT-2 type airplane equipped with a controllable pitch propeller can be flown with the same throttle setting and approximately the same air speed at r.p.m's ranging from 1100 to 2000 by merely changing the pitch of the propeller blades. Reduction of propeller noise may be conservatively estimated at two decibels per 100 r.p.m.

It is anticipated that the reduction of useless, unwholesome noises is a subject that will receive ever increasing attention of Engineers not only in the field of aeronautics but in every line of human endeavor.

---oOo---

PURSUITERS FIND IT DIFFICULT TO CARRY OUT NIGHT MISSIONS

Unforeseen and unprecedented poor weather caused the three tactical squadrons of Selfridge Field, Mich., to experience some difficult flying in attempting to carry out formation night flying missions on the evening of December 8th. The three Squadrons (17th, 27th and 94th) as part of the 1st Pursuit Group training program, were to fly to three different cities in the afternoon, and then return in formation after dark to Selfridge Field. When the squadrons took off on this mission the weather seemed excellent, but fog and snow closed in along the routes of all the squadrons and forced them to change their plans.

The 17th found conditions getting poor near Battle Creek, the objective of their outbound trip. Since the visibility seemed to be getting worse, Lieut. McCormick, leader of the squadron, did not land at Battle Creek but returned immediately to Selfridge, where the squadron landed just after dark. The two other squadrons went to more distant points on their missions, the weather closing behind them in such a manner as to prevent their getting back to Selfridge that night. The 27th arrived at Dayton and started back to Selfridge but ran into fog and snow near Toledo, Ohio, landed at the airport there and stayed overnight. The 94th went to Chicago, but the weather turned bad before they started back, so they stayed overnight in the Windy City. Lieut. Adams, one of the 94th pilots, was forced down enroute at the airport at Gary, Indiana. Lieut. Muffat landed with him to render assistance.

---oOo---

AERIAL DELIVERY UNIT DEVELOPED

The development of an inexpensive aerial delivery unit has been completed at the Materiel Division. This aerial delivery unit is designated as Type A-3. Experimental drop tests were conducted with this type unit, which is composed of a salvaged 24-foot service parachute canopy attached to a cylindrical-shaped bag of duck fabric in which is stowed a five-gallon commercial milk can in a separate compartment.

The complete unit is carried in and released from the wing bomb racks by means of a static line attached to the apex of the container.

Service tests were waived of this type equipment as its operation and function are identical to the previous Type A-1, except that it is of a simplified and less expensive design.

ENLISTED PASSENGER RESCUES HIS PILOT IN NICK OF TIME

EMERGING from his seat and moving away from the fuselage of a plane which had overturned during a forced landing, Private A.M. Farley, passenger, noticed to his horror that the ship was on fire. He rushed to the aid of the imprisoned pilot and, by dint of vigorous hauling and pulling, succeeded in extricating him from the cockpit. He got out just in time, for as soon as they had run a hundred feet from the ship the gasoline tank ignited and the ship became a mass of flames. The fire completely destroyed the airplane, and was so intense that it burnt the crankcase through in one place and melted all the aluminum fittings on the engine.

According to the News Letter Correspondent, this thrilling escape from death of the pilot and passenger occurred on December 8th, during the course of a flight near Selfridge Field, Mich. Lieut. William H. Dun, Air Reserve, was piloting a Berliner-Joyce P-16 Pursuit plane, with Private A.M. Farley as passenger, when the motor of the ship started missing badly and they were forced to land. The only available field for the emergency landing was very small and rough, and very shortly after Lieut. Dun had put his ship into the field, by skimming some trees and ducking under a high tension line, the ship struck a large bump and went over on its back violently. The top of the ship hit the ground so hard that it bent the headrest of the rear cockpit (the gunner in a P-16 faces to the rear, with his back to the pilot) over on top of the pilot's cockpit.

An investigation is being conducted into the cause of the engine failure and the cause of the fire. Evidence points to a "frozen" cam shaft as the immediate cause of the engine failure, though as yet nothing has been discovered as to the reason for the cam shaft stoppage. Either the oil line became clogged or the shaft became scored during a dive and heated beyond the safety point. The fire is believed to have started in the air by a backfire caused by the right cam shaft holding an intake valve in the right bank open after the shaft had "frozen."

Though the accident ended disastrously for one B/J P-16, Lieut. Dun and Private Farley are being congratulated for a happy landing.

---oOo---

AIR CORPS FLIES GASTRONOMIC RESCUE MISSION

Almost a year ago the personnel of the 25th Bombardment Squadron at France Field read the thrilling account of the 11th Bombardment Squadron, commanded by Lieut. Charles Howard, at March Field, Calif., dropping tons of food stuffs to the storm-bound and starving Navajo Indians in Northern Arizona. The hearts of the bombers in the Panama Canal Zone squadron thrilled at the humanitarian feat of their brother outfit on the West Coast, then felt envy. A pony, a complete howitzer battery, numerous sick and wounded gentry and other strange cargoes had been transported by the 25th squadron to or from various parts of the Isthmus, but the squadron hoped for the presence, somewhere, sometime, of some hungry tribe that they could feed by dropping food to them from the air. Then came their chance.

At 8:00 A.M., November 30, 1932, the 25th Bombardment Squadron received about 800 pounds of food in cans and bulk to deliver to the Fort Davis Rest Camp at the mouth of the Chagres River, opposite Fort Lorenzo. Due to the previous heavy rains in the vicinity of Gatun Lake, the gates at the spillway had been open for several days, making the Chagres River unnavigable. For this reason the men at the camp could not be provided with supplies.

All types of supplies were delivered - hams, sausage, pork, flour, sugar, beans, butter, bread, potatoes and a great variety of canned goods.

Containers were obtained from the Coast Artillery Corps in the form of the "Cartridge Storage Case, Model 1901, for 12 "Rifled". These cans are corrugated galvanized iron with lids, cylindrical in shape, over-all dimension 15" diameter x 23" in height, with carrying handles. All containers were lined with packing felt and heavy paper.

The containers were adapted to be hung on the B-5A's standard internal bomb rack by fastening the MK IV Belly Band Adapter for 100-pound bombs to the containers with steel baling strap. This was accomplished by simply twisting the ends of the strap, after passing over the belly band, around the part about the container and pounding it flat. The lids were fastened on with galvanized iron wire. The containers were then fitted with bomb shackles and hung on the racks. The cans were small enough so that all six stations in the bomb racks were utilized. The releasing was accomplished by a bomber in the usual manner of dropping bombs.

A total of sixteen containers were loaded and dropped. Due to the location of the dropping ground selected a minimum altitude of approximately 100 feet had to be maintained. All containers and supplies were received in good condition with the exception of one which failed to release at the proper time due to the handle of the container catching a part of the bomb rack.

It is believed that the ease with which these containers can be adapted to the racks of bombers, the ease of handling and releasing and the good condition of the supplies received makes this method of dropping food a very desirable one. (But no eggs!)

---oOo---

DAY AND NIGHT BOMBING IN THE CARIBBEAN SEA

On December 13, 1932, the 25th Bombardment Squadron had an opportunity to do some live bombing when the Commanding Officer of Fort Sherman requested the help of the Air Corps in disposing of a steel barge 40 x 120 feet, which had been useless for some time. The barge was towed four miles to sea and turned adrift to await the attack of the bombers. The first attack was made at 5,000 feet by six B-5D's flying in close formation, each armed with three 100-pound demolition bombs. The 100-pound size is the lightest of the demolition type bombs. The bomber in the lead plane only used a bomb sight - each of the other bombers released when they saw the bomb fall from the lead plane. The lead plane used one of its bombs as a sighting shot-none of the other planes dropping any of theirs. On the next pass over the target each plane dropped one bomb with the leader which resulted in the center of impact of the pattern being about 100 feet to the left of the barge, with the range, "on target". On the next pass the leader dropped his remaining bomb and the other planes all released two. The center of impact of this pattern was on the left half of the barge and at least four of the eleven bombs being hits. Within two minutes the barge up-ended and sank, but a wooden flooring which had been built on it was loosened and floated away. Upon inspection by the Captain of the tug which had stood by, it was decided the flooring was a menace to navigation and orders were received to break it up by further bombing. Three planes were then loaded with three 300-pounders each

and a new attack begun. This attack was started twenty minutes after the sun had set and with the low visibility of the half covered flooring awash and scattered, low clouds, approaches were difficult and last minute connections for deflection hampered the accuracy of the bombing, somewhat. Three attacks were made with each plane releasing one bomb at a pass. The range was correct in each case and the deflections in each run were lessened until at the third run the bombs dropped 30 feet to one side, which is about the theoretical distance from the hull of a ship at which bombs give their best effect, as the water acts as a tamper and throws the maximum blow against the hull under water. On the last run, two of the bombs were dropped dead, but the total damage caused by all the bombs broke up the flooring sufficiently that the tug captain decided that it was no longer a menace to navigation.

---oOo---

DROPPING A HOUSE FROM A BOMBER

When Mr. Judd, Chief Forester of the Territory of Hawaii, decided not long ago to build an overnight camp in the Kaipapau Forest Reserve on Oahu for the use of forest rangers he was confronted by the prospect of the arduous labor required to take the materials to the chosen site. It was not an elaborate structure that he planned, only a little one room hut with a lean-to, to be built of logs and roofed with sheet iron. Altogether, the materials required weighed only 1,200 pounds or so.

But consideration of the site chosen for the building will reveal just why the transportation of this nominal weight of materials presented such a forbidding task. The spot selected was on the summit of the Koolau Range about four miles by air from the little village of Hauula, on the North-east coast of Oahu and on the Kamehameha Highway which encircles the island. But these four miles are twice that many hours of hard, dangerous mountain climbing along high steep cliffs, stung by rain and buffeted by the strong North-east Trade winds that blow almost unceasingly. The trail winds along over ground eroded and softened by wind and rain and so steep and treacherous that each step must be guarded lest the ground give way beneath the traveller and hurl him into the depths of the chasm below. Not even the sure-footed pack mule can traverse that trail. Hunters out for the wild pigs that roam the wild, barely accessible summit, find that they can do no hunting the first day; the climb from sea-level to the 2,300 foot summit of the range is a full day's work in itself. Hence the transportation of 1,200 pounds of sheet iron, lumber and nails, represented many, many hours of gruelling labor, hardship and danger.

The Army Air Corps, however, solved the problem by offering the use of an Army Bomber to transport the materials by air and drop them at the required place. Accordingly, the galvanized iron for the sides and the roofing, together with the wooden framework members, were cut to convenient lengths and then done up into three (3) bundles and sent to the 23rd Bombardment Squadron at Luke Field for delivery. The forest rangers proceeded to the site unhampered by heavy loads and marked the spot with white cloth panels. Captain R. Baez,Jr., Squadron Commander and Lieutenant Howard Moore, Squadron Operations Officer, conducted an aerial reconnaissance over the territory and drew up a plan of operations. It was found that the almost vertical cliffs on the Northeast side of the Koolau Range interpose a barrier to the strong trade winds and cause a vertical current of warm, moist air up the side of the mountain range. This current is cooled by the 300-foot ascent, and the moisture is condensed into huge cumulus clouds which form and hover along the summit of the range, usually with no space intervening between clouds and mountain. Observation disclosed that occasionally rifts occurred in the clouds, and it was decided that by taking advantage of these rifts, a pilot could fly over the panel and drop the bundles. Back at Luke Field an external bomb rack which is required for heavy loads, was fitted to a Keystone B-5A airplane and a system of slings was devised whereby the bundles could be slung from the bomb rack.

Master Sergeant Samuel J. Davis, enlisted pilot of the 23rd Bombardment Squadron, Air Corps, was selected to fly the bomber and drop the bundles at the first opportunity. The first day, after several hours of patient waiting, he succeeded in dropping one bundle. Then three days of heavy, continuous rain prevented further trials; but on the fourth day the rain ceased, and Sergeant Davis resumed his bombing practice and succeeded in dropping the remaining two bundles.

For an initial attempt at low altitude bombing under hazardous conditions the operations were eminently successful. All three bundles landed in the little clearing, and the last two were only a few feet from the panel. In about six hours of flying, the Air Corps had accomplished a task which would have taken at least two weeks by other methods.

---oOo---

BARKSDALE FIELD, LA., COMES INTO ACTION

Since a rainy morning October 31, 1932, when a special train brought them here, Barksdale Field, Shreveport, Louisiana, has been recognized as home by the Twentieth Pursuit Group. For nearly two years this lusty new addition to the Air Corps has tried valiantly and with commendable success to make the wartime buildings of Mather Field, California, house its first uncertain growth. In contrast to the California home the ambitious building program at Barksdale, admirably planned in every detail and 47 percent completed, made a powerful impression upon the officers and men of the Group and has served as a strong incentive toward the attainment of a high standard of efficiency and morale. This ambition was further heightened by the warm welcome and thoughtful provisions made by the earlier arrivals for the comfort of the Mather Field contingent.

The buildings at Barksdale are of the conventional concrete hollow tile and steel construction and the heating, lighting, ventilating and refrigerating units, and the general completeness of details designed to promote comfort and efficiency are a constant source of pride and satisfaction. Technical and administrative buildings give the impression of farsighted and generous provision for the work to be performed there while the barracks and the commissioned and non-commissioned officers' quarters, of a modified French type of architecture, are the last word in comfort and convenience.

A system of landscape gardening,wisely conceived, will also eventually add its share to the ultimate effect that will rank Barksdale Field as one of the Air Corps' most ambitious projects.

(Barksdale will eventually be the home of the Third Attach Wing,when the 3rd Wing Hq. and the 3rd Attack Group are moved from their present home at Fort Crockett, Galveston, Texas, to augment the 20th Pursuit Group at Barksdale.)

NEW TWO-SEATER PURSUIT PLANE TO BE TESTED

FOLLOWING the announcement in the last issue of the News Letter that a new Pursuit airplane (XP-934) of low wing all-metal construction, having a monocoque fuselage and equipped with automatic slots and flaps, was delivered to the Air Corps Materiel Division, Wright Field, Dayton, Ohio, for full performance testing, comes a further announcement that another two-seater Pursuit airplane is making its bow to the Air Corps, this being a new bi-place ship delivered to the Materiel Division by the Consolidated Aircraft Corporation of Buffalo, New York.

The new airplane, technically known as the YIP-25, is an all-metal low wing monoplane with monocoque fuselage, powered with a single V-1570 engine. The radiator is of the tunnel type. The retractable landing gear folds flush into the wing. The cockpits are enclosed, the design being cleanly streamlined into the lines of the airplane. The YIP will be given full performance testing by the Wright Field test pilots.

The post-war Pursuit design has been that of single-seaters, although the need of two-seater Pursuit has been acknowledged for the past several years. Another such two-seater now in use by the Air Corps is the Berliner-Joyce P-16, with which the 94th Pursuit Squadron, Selfridge Field, Mich., is equipped.

Our Wright Field Correspondent reports that the XP-934 arrived at the Materiel Division in November, being flown in by H.A. Sutton, of the Curtiss Company, but formerly of McCook Field. He is well remembered for his spinning tests of the O-2 airplane, in which at personal risk he obtained information necessary for the correction of the faulty flying characteristics of that airplane. He was at that time Captain Harry Sutton, U.S. Army Air Corps, and retains many friends among officers and civilians at Wright Field.

---oOo---

RESERVE OFFICERS MEET TO DISCUSS THEIR PROBLEMS

The following was received from the Air Corps Reserve Officers' Association of the United States:

The new Air Corps Reserve Officers' Association of the United States in this capacity met in their first business meeting at the Hotel President, Kansas City, Missouri, on October 29, 1932. Taking up their work where they left off at the conclusion of the organization meeting in Chicago last April, ends were discussed, policies were formulated to suit the special problems of the Air Corps Reserve units in the nine Corps Areas of the country. The need for an organization of this kind has long been felt by the Air Reserve units, resulting last October in an immediate attack upon the problems confronting them at the present time.

While most members of the new Association are also affiliated with the National Reserve Officers' Association, it is felt that the uniqueness of the problems of the Air Corps Reserve can best be dealt with by men in close contact with the difficulties themselves. It is expected that cooperation between the associations will be unanimous, with a distinct benefit to both. One of the major problems discussed at the last meeting was that of providing more flying time for Air Corps Reserve units. While this has always been somewhat of a bugbear, it has only been in recent years that it has taken on vital significance. With the increased output of Army trained pilots from the Regular Army Training Center at Randolph Field, Texas, it has been found necessary to relegate the greater percentage of these men to inactive status. In due course of time, the new officers are attached to some one of the Air Corps Reserve units scattered about the country. This factor and others have conspired to reduce the flying time per man to such an extent that he cannot get enough flying practice to keep up his confidence and morale as a flying officer.

An aircraft replacement program was given initial discussion, along with increasing the cross-country flying limits for Reserve Officers. Insurance for Army pilots trained since the World War was given the attention of the Association. Putting the Air Corps Reserves on a pay scale similar to the National Guard was mentioned as a possibility. In order to render expert advice, ten Regular Army officers, including Captain "Ted" Koenig, head of Reserve affairs at Washington, were in attendance, in addition to 18 Reserve officers from the several Corps Areas. The men attending the Convention and meeting were: Lieut. C.J. Kenney, Long Island; Lieut. L.S. Webster, Chicago; Capt. L.C. Harper, National Secretary and Treasurer, New York; Lieut. R.C. Farrell, National Judge Advocate, Kansas City; Capt. G.V. Kelly, National President, New York; Lieut. A.J. Reinhart, Senior Vice President, Dallas, Texas; Major W.L. Plummer, Atlanta, Ga.; Capt. Fred E. Edwards, San Francisco; Major W.F. Centner, Columbus, Ohio; Major H.J. Bazley, Capt. Sam Eaton, Lieut. V.L. Hubbard, Pittsburgh, Pa.; Capts. W.C. Lewis, Clint Johnson, Oklahoma City, Okla.; Capt. Wm. B. Wright, Lieuts. Woffard E. Lewis, Alford D. Hillman, Kansas City, Mo.; Major C.F. Gilchrist, Capt. Roy V. Sheldon, Lieut. Albert M. Lehr, Jr., Tulsa, Okla.; Major Atlas M. Speer, Chicago; Capts. A.M. Woody, Louisville, Ky.; W.F. Kyle, Seattle, Wash.; Greff Allen, New York, and Lieut. Raymond R. Brown, Atlanta, Ga.

---oOo---

MAJOR GILKESON HAS FORCED LANDING AT SELFRIDGE

Major A.H. Gilkeson, Executive Officer at Selfridge Field, Mich., experienced several different emotions while on a flight near Selfridge on December 7th, when his motor cut cold and refused to start again. The Major was out on an individual acrobatic mission, flying above the clouds at an altitude of about 8,000 feet. When the motor cut out and he could not start it again by diving and working the various gadgets in the cockpit, the Major headed in a glide in the general direction of Selfridge Field. When he emerged beneath the clouds, at about 3,000 feet, he was greatly relieved to find himself directly over the town of Mt. Clemens and not very far from the field. However, he was none too close to his home port, for by gliding at the best angle he came in over the edge of the field at only about a hundred feet and landed quite some distance from the hangars.

Lieut. Jacobs, Engineering Officer of the 17th Pursuit Squadron, examined the motor immediately after the forced landing and tentatively diagnosed the trouble as water in the gas freezing on the carburetor jets.

MASSACHUSETTS NATIONAL GUARD AIRMEN IN NEW QUARTERS

By the News Letter Correspondent

THE 26th Division Aviation, Massachusetts National Guard, is housed in its new building at the Boston Airport, having moved in officially during the dedication ceremonies the latter part of September. The new building is the finest structure of its kind to be found in the United States. Being a combination administration building and hangar, it houses all the activities of the Division Aviation under one roof. It is a modern, up-to-the-minute plant which reflects a great deal of credit on those whose initiative and planning resulted in its erection. A description of the building and its furnishings will be given in an early issue of the News Letter, but in the meantime every member of the Air Corps is cordially invited to visit Boston and inspect for himself the new building, and to partake of its many conveniences and facilities. A friendly welcome and, perhaps an initiation, await all who come this way.

The General Staff of the 26th Division, Mass. N.G., just completed the first semester of an Observers' School established by the Division Air Officer, Lt.-Col. L.E. Boutwell, for the purpose of familiarizing the officers of the Staff with the problems encountered in aerial observation, to demonstrate its scope and its limitations, and to provide sufficient training in that subject so that each Staff Officer could, if the occasion arose, be detailed to make an aerial reconnaissance himself. The results are considered excellent so far, and it is with a great deal of anticipation that the Staff looks forward to the resumption of the course when weather permits next Spring. The last problem - a puff target practice - was conducted in such windy, zero weather that the Staff was dubbed the "26th Division Frostbite Staff."

The foregoing is only one phase of liaison which this organization is conducting with the rest of the Division. Such missions as practice in communications involving the establishment of message pick-up stations and panel stations; defense against aircraft; contact missions, and so forth, have been conducted with other branches during the last training year. A long series of missions was conducted with the 101st Field Artillery, using the familiar puff targets, the rest of the procedure of fire control being simulated to the Queen's taste. The organization has also just completed making aerial photographs of every State Armory in the Commonwealth for the State Quartermaster's Department. This work has been carried on for two years, and now that it is completed the value of such work is apparent. As a training medium with definite results, it cannot be excelled, for every pilot and observer was engaged in getting photos of the 55 armories, approximately 250 aerial views being taken, from which the best ones were selected. The Executive Department of the State has used air transportation extensively

Training is being kept up to a high standard, and every Saturday afternoon a scheduled training program is carried out. To the casual observer watching the functioning of one of these schedules, it creates the impression that these boys do this sort of work continually instead of weekly. There is a remarkable lack of fuss and excitement, the take-offs and landings of each mission being made on scheduled time to the minute. It has thus been possible to carry out such work as aerial gunnery on the edge of a busy harbor like Boston with no danger, the time of fire being accurately held under control. Our ground targets are located on one of the harbor islands, and the aerial range is flown between the mainland and the outermost lighthouse. Under these conditions it has been possible to qualify the following aerial gunners: Expert, Lieut. Howard Keith, 740; Sharpshooters, Lieuts. Allen Thompson, 655; Wilfred Ashworth, 639; Henry Harris, 631; Bradford Shaw, 627; George Kimball, 519; Marksmen, Lieuts. Frank Kendall, 486; Joe Ballard, 459; Don Flinn, 407.

All of these officers are observers, the pilots losing out on the completion of their fire. Two-way radio communication was developed to the extent that conversation between ships, and from ground to ship and back are now part of the weekly scheduled problems. On a recent night training flight to Hartford, Conn., the radio ships were heard as soon as they took off from Hartford for Boston, 90 miles away, but communication to the ships was not possible until the range was considerably shortened, due to broadcast interference, WGN at Chicago being the worst conflict on our wave. It will be a happy day when or if the Air Corps secures some radio equipment which will operate outside the broadcast band and in its own channel.

---oOo---

BOMBARDMENT BOARD IN SESSION

A Bombardment Board, convened on November 1st at Wright Field, Dayton, Ohio, and sat through the remainder of that week, studying the relative merits of several types of Bombardment airplanes, both as to flying qualities and general usefulness to the Air Corps. Those comprising the Board were Lieut.-Col. J.H. Pirie and Capt. C.L. Cummings, Office of the Chief of the Air Corps; Major H.A. Dargue and Lieut. C.W. O'Connor, Langley Field, Va.; Major Carl Spatz, J.T. McNarney and Lieut. C.H. Howard, March Field, Calif.; Lieut. K.N. Walker, Maxwell Field, Ala.; Capt. J.C. Taylor and Lieut. L.F. Harman, Wright Field, Ohio.

---oOo---

HEAVY SNOWFALL PERMITS SKI FLYING AT SELFRIDGE FIELD

A snow storm in the middle of November lasting almost 24 hours, gave Selfridge Field a blanket of snow over six inches deep. The winter continued cold during the following days, and at the time the News Letter Correspondent submitted this item he said that "the snow is still with us." Every squadron at the field had several of its ships equipped with skis, so that every pilot was able to get some time practicing landings and take-offs on this type of undercarriage.

"For many of those here, ski flying is a brand new experience," says the Selfridge Correspondent, "for it has been two years since enough snow has fallen here to enable planes to use this field for ski operations. If the weather of the past two weeks is any indication of the winter we will have, all squadrons here will probably have to fly exclusively with skis during mid-winter."

AIR CORPS LOSES FOUR OFFICERS

The Army Air Corps was rather hard hit in the matter of casualties among its commissioned personnel during the past few weeks. Two of its veteran officers, Captains Louis R. Knight and Asa J. Etheridge, died from natural causes, while two younger officers, 2nd Lieuts. Donald W. Armagost and Laddie J. Miller, the latter of the Air Reserve, were killed when, during the course of a blind flying training mission, the airplane dived into San Francisco Bay. According to press reports, eye witnesses stated that there was an explosion before the craft hit the water. The airplane was completely wrecked and recovered without the engine. Up to this writing, the bodies of the two officers had not been recovered. The telegraphic report on the accident states that the cause thereof is unknown and that a board of officers was appointed to investigate same.

Captain Knight succumbed to heart trouble. He had been suffering from high blood pressure for the past several years. A native of Brownwood, Texas, Captain Knight was born September 21, 1880. He served in the Spanish-American War as Private, Company K, 2nd Regiment Texas Infantry, from May 13, 1898, to November 9, 1898. Upon the entry of the United States in the World War, he attended the first Officers' Training Camp at Leon Springs, Texas; was commissioned Captain, Infantry Reserve Corps, August 15, 1917, and assigned to duty with the 159th Inf. (5th California) 40th Division, Camp Kearney, Calif. Shortly thereafter, he transferred to the Aviation Section, Signal Corps; served for a month at the School of Military Aeronautics, Atlanta, Ga., and was then transferred to Wilbur Wright Field, Ohio, February 16, 1918. For a brief period he commanded the 265th Aero Squadron, but upon the opening of the Armorers' School at this field, March 15, 1918, he was assigned as Adjutant thereof.

The efficient services Captain Knight rendered earned him a promotion to the rank of Major in September, 1918. On December 14, 1918, he was transferred to the Aviation Repair Depot, Montgomery, Ala., where he remained until April, 1920, when he was transferred to the Aviation Supply and Repair Depot, Rockwell Field, Calif. While at Wilbur Wright Field and at Taylor Field, Montgomery, he availed himself of every opportunity to perfect himself in flying, and on March 31, 1919, he passed the necessary tests and was rated a Reserve Military Aviator. He was appointed a Captain in the Regular Army, July 1, 1920.

Captain Knight's next assignment was at Langley Field, Va., where he graduated from the Air Corps Tactical School and also served at this institution as an instructor. In 1923 he was assigned to Boston, Mass., for duty as Air Officer of the First Corps Area. After a two-year tour of duty in the Philippines, where for one year he was in command of Kindley Field, he was transferred to Brooks Field, Texas, where he served for about five years until May, 1932, when he was again assigned to Boston, this time in command of the R.O.T.C. Unit of the Massachusetts Institute of Technology.

Captain Etheridge, who died in Honolulu from pneumonia following an appendicitis operation, was one of the real veterans in the Air Corps, being affiliated with Army aviation practically from its beginning. He was born September 6, 1875, at Columbia, N.C. Entering the military service in 1897, he served three years with the Coast Artillery Corps, three with the Army Service Corps at West Point, N.Y., six with the Signal Corps and six with the Aviation Section, Signal Corps, holding the grade of Master Signal Electrician at the time of his appointment as 1st Lieutenant, September 20, 1917. He served with the 1st Aero Squadron and saw service across the border during the Punitive Expedition into Mexico. His expertness in engines and airplanes enabled him to render invaluable service during this emergency.

On September 24, 1917, Captain Etheridge was assigned to duty at Scott Field, Ill., as Officer in Charge of the Engineering Department. He received his promotion to Captain on Feb. 19, 1918. In January, 1919, he was transferred to the Aviation Repair Depot at Indianapolis, Ind., served there for several months and then returned to Scott Field. In December of that year, he was assigned to duty at Brooks Field, Texas. He received appointment as 1st Lieutenant, Regular Army, July 1, 1920.

Completing the lighter-than-air course at the Balloon School at Ross Field Arcadia, Calif., and being rated Balloon Observer, March 27, 1922, Captain Etheridge was assigned to duty at Lee Hall, Va., and commanded the 22nd Balloon Company. Early in 1923, he was transferred to Langley Field, Va., and after several months' duty at that station was assigned to the Advanced Flying School, Kelly Field, Texas, where he completed the Special Observers' Course. He completed a tour of duty in Hawaii, served for several years at Selfridge Field, Mich., and was on a second tour of duty in Hawaii at the time of his death.

Lieut. Armagost, a native of Kansas, was born on March 7, 1905. He graduated from the U.S. Military Academy, West Point, N.Y., June, 1929, and assigned to the Cavalry. Detailed to the Air Corps, he commenced flying training with the October 15, 1929, class at March Field, Calif. He graduated from this school, also from the Advanced Flying School, Kelly Field, Texas, and rated Airplane Pilot and Airplane Observer, October 11, 1930. He had just completed a tour of duty in Hawaii and was transferred to Crissy Field, Calif., when the unfortunate accident terminated the career of this promising young officer.

Lieut. Miller was born at Colorado Springs, Colo., Sept. 21, 1902. He graduated from the University of Nevada, and attended the University of California for six months. Appointed a Flying Cadet, he commenced flying training at March Field on July 1, 1929, completing the course there as well as at the Advanced Flying School, Kelly Field. On June 21, 1930, he was commissioned a 2nd Lieut., Air Reserve, and rated Airplane Pilot and Airplane Observer. He completed a period of 16 months of active duty at Crissy Field, Calif., and at the time of the fatal accident was on two weeks' active duty at this field under his Reserve commission.

The Air Corps feels the loss of these officers very keenly, and extends its deepest sympathy to their bereaved families.

---oOo---

Send in your contributions to the News Letter on the 1st and 15th of the month. Have not heard as yet from Barksdale Field and would appreciate Langley Field resuming its former newsy contributions. And what has happened at Mitchel Field and Maxwell Field?

(Barksdale Field came in just before we went to press,- and some of the dope is included in this issue.)

PREPAIRING FOR ANOTHER INVASION OF THE ANTARCTIC REGIONS

A low-wing all-metal monoplane circled Wright Field, Dayton, Ohio, on November 29th and came in for a landing. Closer inspection showed it to be a Northrup "Gamma," powered with a single Wasp motor, and both sides bore the legend in fuselage high letters - "Ellsworth Trans-Antarctic Flight." When it stopped, Messrs. Bernt Balchen and E.T. Allen climbed out. Both arerwell-known veteran flyers. The former is especially remembered for his connection with the Trans-Atlantic Flight of Admiral Richard E. Byrd in 1927, and later with Admiral Byrd's Expedition to the Antarctic regions. Mr. Allen was in the flying game for a long time, and when the Air Corps Engineering Division was located at McCook Field, Dayton, he was on duty there as civilian test pilot. He is at present connected with the Northrup Company.

According to the News Letter Correspondent from Wright Field, "they were flying the plane, they explained, from the Northrup plant, Fairbanks, California, to New York, where, about the first of the year, they expect to board ship for the Arctic regions. They will take the plane with them in order to give it a thorough testing and also to test various types of equipment in temperatures of 50 degrees below zero and colder. These tests are to be in preparation for an expedition into the Antarctic upon which they hope to embark in August, with Sir Hubert Wilkins in charge. During the expedition, Lincoln Ellsworth and Bernt Balchen in the "Gamma" will attempt a flight from Ross Sea across the polar region to Weddell Sea for the purpose of learning whether the two seas are connected and also to discover whether the high range of mountains crossing that region is a continuation of the Andes range.

The flight will necessarily be non-stop from their base across Ross Sea to Weddell Sea and back again, with no chance of a landing, a distance of 3,200 miles. Leaving in August, they hope to arrive at their base in October or November, which is the Antarctic summer season. Fully automatic cameras will record the terrain they fly over. The plane is at present also equipped with a two-way radio set - long and short wave, an aperiodic compass, a directional gyro and drift meter. Final decision as to instruments will be made as a result of the preparatory Arctic tests. After a short visit, the two pilots continued their flight eastward."

---oOo---

NO DEARTH OF CANDIDATES AMONG MASSACHUSETTS NATIONAL GUARD AIRMEN FOR SEAT OF HONOR

"At a recent drill period," writes the News Letter Correspondent of the 26th Division Air Service, Massachusetts National Guard, Boston, "a prolonged discussion took place, replete with legal phraseology, between two of our talented members of the bar (law) with regard to the occupancy of the revered 'Seat of Honor.' It seems that the Assistant Operations Officer, Lieut. John Sherburne, felt that his photograph in the Seat was an act of discourtesy to the Division Air Officer, Lieut.-Col. Boutwell, inasmuch as his (John's) modus operandi of acquiring the honor was open and above board, being nothing less than colliding with a small object such as a hangar, or a truck, or something insignificant like that, whereas the Colonel had, by high rank and authority valiantly endeavored to hush up an incident involving the elimination of a boundary light on the Airport by trying to run it off the field with a BT-1, the effect being disastrous to the light as well as the propeller and radiator, the subsequent leak making it appear as if Boston Harbor had overflowed its banks. The result of the discussion was, of course, a change of photographs in the frame. The Colonel's one NO vote was,however, insufficient to overcome the other 24 YES votes in the Squadron, as is usually the case.

It is felt, however, that due credit for honor if ofttimes overlooked in awarding the occupancy of the Seat of Honor, and this Correspondent's memory recalls a number of instances worthy of mention which were not brought up for consideration in due course. There was the case of Lieut. Frank Otis who neglected to keep on flying after a message pick-up at the gunnery range. Then there is the case of Lieut. Crawford Hollidge who, returning from Boston with a few loose articles in the cockpit, was much chagrined at not finding them when he landed. But his chagrin was nothing compared to his embarrassment when the remains of said articles were presented to him by the searching party which saw them fall out of the ship as he looped before landing. In another case, it may be that the narrow escape was sufficient, but it is recalled that Capt. "Pop" Luther never adorned the Frame for his parachute episode when, while making a practice jump, he pulled the rip cord too soon, wrapping the chute over the tail surfaces of the ship, but getting free with nothing more than a few small rents in the chute. We never lack candidates for honor positions."

---oOo---

SOUTH SEA INSECT INVADES RANDOLPH FIELD

Randolph Field was forced to fight off its first overseas invasion recently, the invader, from the South Sea Islands, being known as an earwig. One hedge was almost destroyed before the insect was found by the Landscape Intelligence Department. Investigation following the dying out of a hedge fell upon one Charles Brooks, enlisted man. Digging about the roots of the hedge he found eight vicious insects, who leaped into the air and appeared about to attack him. He used great discretion because of a pair of wicked bayonets worn on the insect's hindermost parts. All but one of the insects was completely destroyed. Doctors and others around the hospital called the bugs poisonous.. The head of one was removed but he continued to show evidence of life for two days. After the signs of life had disappeared, Brooks placed the remains of the insect in a match box and took it to Col. M.L. Crimmins at the Witte Memorial Museum. Here it was identified. The two bayonets worn as a rear guard by the invader, according to Col. Crimmins, are poisonous but not deadly in most cases. The bayonets also act as poles for vaulting from the ground for a quick take-off, as the bugs are winged though they seem to live largely on roots and underground feed.

---oOo---

A war to the finish is being fought at March Field, Riverside, Calif., with the attacking forces consisting of the invincible "flu" germs. The hospital is full and many victims are at bay in quarters. The medical officers, however, have the situation well in hand, and no serious cases have so far developed.

INCREASED PERSONNEL FOR ALBROOK FIELD

A sudden influx of 24 Air Corps officers into the Panama Canal Department gives Albrook Field, Canal Zone, a present strength of 38 Regular and Reserve officers with 8 more expected this December. With those assigned for quarters only, the strength of the post is now 50 officers, 531 enlisted men and 7 civilians.

At the present time, the 24th and 78th Pursuit Squadrons, the 44th Observation Squadron and the 80th Service Squadron garrison the field. The two Pursuit Squadrons are staggering along with six Pursuit ships apiece,"but rumor has it that we will have 20 P-12's by the first of the year," says the News Letter Correspondent." The work of the Pursuit Squadrons is further hampered by the lack of mud guards, as the Becings cannot be flown when the field is muddy. The 44th Observation squadron,with six ships available, is performing mostly cooperative missions with the numerous Infantry, Artillery and Engineering units on the Pacific side, both in the Canal Zone and in the interior. With the coming of maneuvers, the scope of cooperative missions will be greatly increased.

Albrook Field is in the tropics, but a combination of new type tropical construction in the buildings and quarters makes newcomers understand why the few old timers here keep plenty of blankets for the chilly night winds that come over the Continental Divide or in from the Pacific Ocean. Like all new posts, the buildings and equipment are available here at Albrook are modern and complete in every detail, and before leaving the States your Correspondent had heard of the open tropical construction, electric refrigerators, high dry closets and late autumn nights.

---oOo---

THERE ARE CHICKENS AND CHICKENS

One afternoon recently, a Captain of the Air Corps Technical School, Chanute Field,Ill., startled his tranquil home and family with the disturbing announcement that he would go to the local railroad station to meet the "four thirty-two morning train from Chicago to "pick up up a couple of good looking chickens." This officer, known to be the soul of propriety, was not seriously doubted, but it was admitted that his action was to be viewed with some concern. Nothing further was said, his good lady preferring to regard it as a joke or to live in any slight tantalizing doubt, rather than to ask further and to receive a straight statement of shocking confirmation. However, when before retiring, the officer set the alarm clock with special care and tested it for double assurance of its proper functioning, even solidly founded family faith received a shaking. In the dark early morning, under the dim watchful rays of Orion, the sky giant, overhead, the Captain waded through eight inches of snow to the garage and backed out the family car, driving away not only with the car but with the deepest misgivings of his loved ones left behind. He was observed to meet the train with an expectant smile in which, on close scrutiny, could be seen an element of hidden excitement and well concealed delight. After the train stopped the Captain, to the surprise of those few who were present, literally carried out his expressed intention, and actually did pick up two of the best looking chickens in Illinois, which were being returned home after winning two first prizes at a Chicago Poultry Show.

---oOo---

COLLISION WITH HIGH TENSION POWER LINE PROVES FATAL

Lieut. Walter A. Oglesby of the 8th Attack Squadron, Fort Crockett, Texas, crashed into a high tension power line near the Seguin Road, about five miles from Randolph Field, on the afternoon of November 13th, and was killed instantly. On his way from Kelly Field, where he graduated last June, Lieut. Oglesby apparently was flying low when the wheels of his landing gear hit the wire, hurling the plane into the ground. The motor of the high powered Attack ship was thrown 40 feet from the remainder of the plane. The plane did not catch fire.

Lieut. Oglesby was on his way to Randolph Field, where he was to pick up Sgt. Jackson and return him to Fort Crockett, his home station. When the plane hit the high tension line, it cut two main line circuits between San Antonio and the power houses at New Braunfels, requiring a complete new hook-up to give the city electric power. A crew of Public Service men was sent to the scene to make repairs, this requiring several hours' work. Lieut. Oglesby, who was 23 years of age, is survived by his mother, Mrs. B.J. Oglesby, Charleston, S.C. He was graduated from the Citadel Military College of Charleston, S.C., in 1931, and played on the varsity football team.

---oOo---

KITCHEN MECHANIC DECIDES TO BECOME AVIATION MECHANIC

The Secretary of the Air Corps Technical School, Chanute Field, Rantoul, Ill., daily has his sense of humor whetted by letters received from applicants for enlistment. One recently received from a native of South Dakota and addressed to the "Manager, Airways Technical Army School, Shanute Field, Rantoul, Ill.," reads as follows:

"Dear Sir:

I've been reading about you in Popular Mechanics and I've had a scrap with the old hellion I work wor and I'm tired of being a kitchen mechanic and have decided to become a Aviation Mechanic. I am a good girl twenty two years of age, weigh plenty and never get dizzy. So tell me when I'm to come to Rantoul, because I'm going to join the army or know the reason why

(Signed by the lady)

Note: She was delicately but definitely informed of the reason why.

---oOo---

A large group of R.O.T.C. students from the Pasadena Junior College, Calif., paid a visit to March Field recently for the purpose of seeing the Air Corps in action. Under the direction of 2nd Lieut. Harry Crutcher, the visitors were given an opportunity to inspect the airplanes, shops, barracks, parachute department, hangars and supply departments, and to witness an aerial review and inspection conducted by the First Bombardment Wing.